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The object of this study was to measure videotape recorded playbacks as a variable in mastery of a basic speech course in an experimental college program for low income underachieving students. The beginning speech course is required of all these students in the Experiment in Higher Education at Southern Illinois University. Experimental and control groups (E- and C-groups) were set up after the fourth week of the course. The experimental variable was the use of the video trainer equipment (camera, monitor, and tape recorder) as an adjunct to the instructor's oral critique and written evaluations of student assignments. Findings are reported in two parts. Part I, the results and conclusions of comparisons of E- and C-group scores on tests, critics' evaluations, and self evaluations, notes no differences between the two groups. In fact, the video playbacks may have had a detrimental effect on the E-group. Part II, findings based on semantic differential scales, reports that the self-safety factor and total-self measures were the only significant differences. (NH)

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# AN EXPERIMENTAL STUDY OF THE EFFECTIVENESS OF THE USE OF VIDEO-PLAYBACKS IN TEACHING THE UNDERGRADUATE BASIC SPEECH COURSE TO UNDER-ACHIEVING, CULTURALLY AND SOCIALLY DISADVANTAGED COLLEGE YOUTH

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## PROBLEM STATEMENT

In recent years, there has been growing interest in experimentation with video-playbacks in university speech courses (Livingston and Doler, 1964; Frandsen, Larson, and Knapp, 1967). In these studies, attempts have been made mainly to develop methodological innovations (e.g. Frandsen has studied the differences between simultaneous and sequential video-tape playback critiquing methods). The subjects for these studies, however, have been drawn from the orthodox university campus. In no cases that we know of has there been any research of the effects of the use of video-playbacks on speech training for under-achieving, culturally and socially-disadvantaged college youth. Thus, the use of this kind of student as the experimental subject is what purports to make the study reported herewith unique.

## OBJECTIVES

The general objective was to discover whether the use of video-tape recorded playbacks makes a significant difference for the subjects in their attempts to master the goals of the basic course in speech. The following hypothesis was advanced: The use of video-playbacks as a method of illustrating and augmenting oral/written evaluations of the speaking performances of the students will result in (1) an increased understanding of the principles of good speech, (2) a significant improvement in their speaking performances, and (3) stronger feelings of positiveness which the students have of themselves as speakers.

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## PROCEDURES

Subjects were drawn from the Southern Illinois University Experiment in Higher Education required course in beginning speech which Mr. Hawkins taught from January through June of 1967. Some background comments about this program are necessary before proceeding futher.

The Experiment in Higher Education (hereafter referred to as EHE) is a two-year experimental education program which is being conducted for approximately one hundred low-income, underachieving youth from East St. Louis, Illinois. Jointly funded by the Office of Economic Opportunity and the State of Illinois, the EHE seeks to demonstrate that, in the words of its director, Dr. Hyman Frankel, the "inhibiting influence of certain social and economic factors can be overcome through the utilization of imaginative, specially-designed instructional and supportive techniques." Among others, these techniques include the use of teacher counselors, teaching machines, and a video-trainer.

All of the EHE students, predominately Negroes who live in East St. Louis, have been drawn from the same socio-economic class. They may be accurately classified as underachieving and culturally, socially, and economically disadvantaged. (For specific data concerning ACT scores, IQ's, family background, etc., see paper entitled, "An Experiment in Higher Education," by Hyman Frankel, Donald Henderson, and Linda Ellsworth, prepared for the 44th Annual Meeting of the American Ortho-Psychiatric Association, March 20-23, 1967, Washington, D.C.)

There were 46 students registered for the EHE required course in oral communication. Topics and activities for the first three weeks included the following: introduction to the field of speech and background material on

speech training in an urban society, a round of introductory "ice breaker" speeches, a series of speech-training films, and a series of evaluations. These evaluations were carried out through the use of the following measuring instruments.

The first was an objective type test over the basic ideas in the course text book, Fundamentals of Speaking, by Gilman, Aly, and White. The questions were drawn from validated departmental final examinations used during the past 9 years by the Speech/Theatre faculty members at Southern Illinois University.

The second instrument was a check list of speech-performance criteria based on standards used by the SIU Speech faculty members in judging speech performances in their classes.

And the third instrument was a set of semantic differential scales drawn from scales used in Lemert's study of the dimensions of source credibility. The key questions which the students were asked to respond to in filling out these scales were: (1) How do you feel about yourself as a speaker? and (2) How do you think the others in the class feel about themselves as speakers? There were 24 scales used, 8 drawn from the "safety factor", 8 from the "qualification factor", and 8 from the "dynamism factor". Scales selected were those which satisfied two criteria: (1) they were significantly loaded on the particular factor in question, and (2) they reflected basic speech course goals and objectives which appear in representative speech text books used throughout the country.

All of the instruments were executed by the students themselves. The second instrument was utilized in two ways. The students prepared self-evaluations of their speaking performances in class and three critic judges

(speech majors from the Edwardsville Campus of Southern Illinois University) also prepared evaluations of the students for the same performances.

During the fourth week of the course, the video-trainer was demonstrated for the entire EHE staff and student body. All of the students were introduced to the concept of video-playbacks and all had the opportunity to see themselves on monitor briefly. Thus, the entire group of 46 students in the class was exposed to the same orientation.

After the fourth week of the course, the main group was divided into two, closely matched sub-groups (one with 24, the other with 22 students). Criteria used in the matching were sex and completion of a high school speech course. One group, designated as "control", had 9 men and 15 women; ten of them completed the high school course, 14 did not. The other group, designated as "experimental," had 10 men and 12 women; seven of them completed the high school course, 15 did not.

The control and experimental groups were taught as separate classes, meeting twice weekly for the remainder of the term. Each group was assigned 4 platform speaking assignments: the first was a simple, informative speech; the second, a complex speech of exposition; the third, a ceremonial speech; and the fourth, a speech of advocacy. Both groups were taught according to procedures and techniques that were adapted from those followed in teaching the orthodox beginning speech course. Speeches were presented and then followed by the instructor's critiques and students' comments. The essential difference is that the video-trainer equipment (camera, monitor, tape-recorder) were used in the experimental group. For this group, playbacks were used to illustrate and augment the instructor's oral critique and written evaluations. Thus, the experimental

variable was the effect of the use of the playbacks on the measurable variables: the scores on the evaluations.

After the completion of the second speech assignment -- the 13th week -- both groups were evaluated once again with the three measuring instruments used at the beginning of the course. Following these mid-term evaluations, both groups became experimental. There were two reasons for this change in procedure: (1) there was some evidence to suggest that the experimental students during the first part of the course were improving at a faster rate than the control students and (2) there was pressure from the EHE administrative office to use the video-trainer more extensively since it was on a rental basis.

At the conclusion of the course in June, the same evaluations were administered for the third time. Pre-, mid-, and post-course scores were calculated, analyzed, and interpreted. Results (including methods used for their derivation) and conclusions are summarized as follows. (Note: Part I, prepared by Mr. Hawkins, includes results and conclusions based on a between- and within-group comparative analysis and interpretation of the scores on the written test, the critics' evaluations, and the students' self-evaluations. Part II, prepared by Mr. Engbretson, includes results and comparisons based on a similar analysis and interpretation of the scores on the semantic differential scales.)

PART I: Written test, critics' evaluations, and students' self-evaluations.

## RESULTS

For a between-group comparison, the pre-course scores on the written test, the critics' evaluations, and the students' self-evaluations for the two groups were subtracted from the mid- and post-course scores, respectively. These score differences were summed and then used to calculate t-scores. (The formula utilized was: $t = \frac{M_1 - M_2}{\sqrt{S^2\left(\frac{N_1+N_2}{N_1 N_2}\right)}}$ See table I) An inspection of table I indicates that there are no statistically significant t-scores for the two groups.

For within-control and within-experimental group comparisons, a similar procedure was followed except that the t-scores were calculated for each of the two groups separately. (The formula used was: $t = \frac{\Sigma D}{\sqrt{\frac{N\Sigma D^2 - (\Sigma D)^2}{N-1}}}$ where D= the differences in the scores between mid and pre and post and pre measures. See tables II and III.) An inspection of table II indicates statistically significant t-scores in the critics' evaluation mid-pre and post-pre measures for the control group. Table III reveals a similarly significant t-score for the self-evaluation post-pre measure as well as the critics' evaluation mid-pre and post-pre measures for the experimental group.

## CONCLUSIONS

1. Most of the students seemed enthusiastic about the use of the playbacks. This is attested to by the tone of their written evaluation comments at the end of the course: "The use of the video-trainer is very helpful to me because I can see where and when I make mistakes." "The video-trainer gave me a chance to see myself as I was and I saw the movement of my fingers which I wasn't conscious of before and the dropping of my voice at the ends of some words."

2. A few students, mainly the academically poorer, seemed uncomfortable while on camera: they displayed a good deal of squirming and fidgeting. They also seemed negatively predisposed toward viewing the playbacks of their performances in full class session; they preferred to see themselves in private or in the company of close friends. Finally, these students, in filling out the self-evaluations, seemed to find it difficult to be honest with themselves; many of them tended to over-rate their performances.

3. According to the analysis of the data as reported in the results above, we are led to the following:

a. For the kind of subject involved in this experiment, the use of the video-playbacks, as opposed to the non-use of the playbacks, does not seem to contribute to an increased understanding of the principles of good speech or to a significant improvement in speaking performance. Indeed, the negative post-pre t-scores in table I suggest that the use of the apparatus may have had a detrimental effect on the experimental group.

b. The subjects in both groups seemed to make significant improvements in their speaking performances as measured by the critics' evaluations and, to a lesser extent, in the students' self-evaluation scores for the experimental group.

4. There is some subjective evidence which would suggest that some of the students did not understand the language used for the written test

and the speaking performance evaluation criteria.

5. Finally, it is obvious that further study is needed to continue the search for different ways of using the playbacks for the culturally and economically/socially disadvantaged.

PART II: Semantic differential scales

RESULTS

As of this date, an analysis of the pre-, mid-, and post-scores, the score differences, and the calculated t-scores points to the following:

1. There are no significant differences between the pre- and mid- scores on any factors for either the experimental or control groups.
2. Differences for the self-safety factor for each group, while not significant, are in the opposite direction expected.
3. There are significant differences between the experimental and control groups on the self-safety factor and the total-self measures.
4. The dynamism factor seems to be the most stable factor of self and other credibility as none of the dynamism differences reached significant levels.

CONCLUSIONS

1. There is evidence which suggests that a different kind of semantic differential scale ought to be devised for the subjects in this study. (Perhaps a different language is required.)
2. More investigation is needed to account for the kinds of self-safety perceptions in the control group.

(Note:Tables and other supporting data for the analysis of the semantic differential scales are available in a more complete report.)

TABLE 1: BETWEEN-GROUP COMPARISONS OF MID AND PRE AND POST AND PRE SCORE DIFFERENCES FOR THE THREE EVALUATIONS

| MEASUREMENT: | N Mid-pre Cont. | N Mid-pre Exp. | N Post-pre Cont. | N Post-pre Exp. | D's for mid-pre Cont. | D's for mid-pre Exp. | D's for post-pre Cont. | D's for post-pre Exp. | t-scores mid pre | t-scores post pre |
|---|---|---|---|---|---|---|---|---|---|---|
| WRITTEN TEST: | 20 | 20 | 19 | 12 | 33 | 30 | 56 | -5 | .115 | 1.207 |
| CRITIC EVALUATION: | 12 | 11 | 19 | 16 | 96 | 87 | 209 | 181 | .294 | -.124 |
| SELF-EVALUATION: | 12 | 11 | 18 | 17 | 167 | 53 | 116 | 147 | 1.272 | -0.363 |

TABLE II: WITHIN-CONTROL GROUP COMPARISONS OF MID-PRE AND POST-PRE SCORE DIFFERENCES FOR THE THREE EVALUATIONS

| MEASUREMENT: | N Mid-pre | N Post-pre | $\Sigma$ D's for mid pre | $\Sigma$ D's for post pre | t-scores mid-pre | t-scores post-pre |
|---|---|---|---|---|---|---|
| WRITTEN TEST: | 20 | 19 | 33 | 56 | 1.009 | 1.511 |
| CRITICAL EVALUATION: | 12 | 19 | 96 | 209 | 3.258 | *6.266* |
| SELF-EVALUATION: | 12 | 18 | 167 | 116 | 2.207 | 1.256 |

TABLE III: WITHIN-EXPERIMENTAL GROUP COMPARISONS OF MID-PRE AND POST-PRE SCORE-DIFFERENCES FOR THE THREE EVALUATIONS

| MEASUREMENT: | N | | Σ D's for mid pre | Σ D's for post pre | t-scores | |
|---|---|---|---|---|---|---|
| | Mid-pre | Post-pre | | | mid-pre | post-pr |
| WRITTEN TEST: | 20 | 12 | 30 | -5 | .576 | -.249 |
| CRITIC EVALUATION: | 11 | 16 | 87 | 181 | 4.454* | 6.909* |
| SELF-EVALUATION: | 11 | 17 | 53 | 147 | 1.666 | 2.477* |